

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

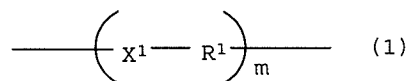
Please amend the claims as follows:

1. (Withdrawn) A resin composition used as an adhesive bonding a semiconductor chip or a heat dissipating member comprising a filler (A), the following compound (B) and a thermal radical initiator (C), and substantially not containing a photo polymerization initiator:

Compound (B):

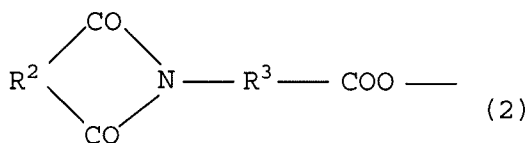
a compound containing a structure represented by the following formula (1) in a main chain and having at least one functional group represented by the following formula (2):

Formula (1):



wherein X^1 is $-\text{O}-$, $-\text{COO}-$ or $-\text{OCOO}-$; R^1 is a hydrocarbon group having 1 to 6 carbons; "m" is an integer from 1 to 50; and if the formula contains two or more parts which are denoted by the same symbol, each of them may be the same or different from each other;

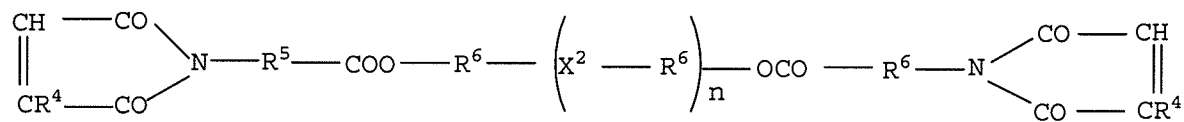
Formula (2):



wherein R^2 is $-\text{CH}=\text{CH}-$ or $-\text{CH}=\text{CH}-\text{CH}_2-$; R^3 is a hydrocarbon group having 1 to 11 carbons; and if the formula contains two or more parts which are denoted by the same symbol, each of them may be the same or different from each other.

2. (Withdrawn) A resin composition according to Claim 1, wherein the filler (A) is silver powder.
3. (Withdrawn) A resin composition according to Claim 1, wherein X^1 of the compound (B) is $-O-$.
4. (Withdrawn) A resin composition according to Claim 1, wherein R^1 of the compound (B) is a hydrocarbon group having 3 to 6 carbons.
5. (Withdrawn) A resin composition according to Claim 4, wherein R^1 of the compound (B) is at least one selected from the group consisting of $-C_3H_6-$ and $-C_4H_8-$.
6. (Withdrawn) A resin composition according to Claim 1, wherein R^2 is $-C_2H_2-$ and R^3 is $-CH_2-$ in the compound (B).
7. (Withdrawn) A resin composition according to Claim 1, wherein the compound (B) has two functional groups represented by the formula (2).
8. (Withdrawn) A resin composition according to Claim 1, wherein the compound (B) is a bis-maleimide compound (B') represented by the following formula (3):

Formula (3):



(3)

wherein X^2 is $-O-$, $-COO-$ or $-OCOO-$; each R^4 is hydrogen atom or a methyl group; each R^5 is a hydrocarbon group having 1 to 11 carbons; each R^6 is a hydrocarbon group having 3 to 6 carbons; "n" is an integer from 1 to 50; and if the formula contains two or more parts which are denoted by the same symbol, each of them may be the same or different from each other.

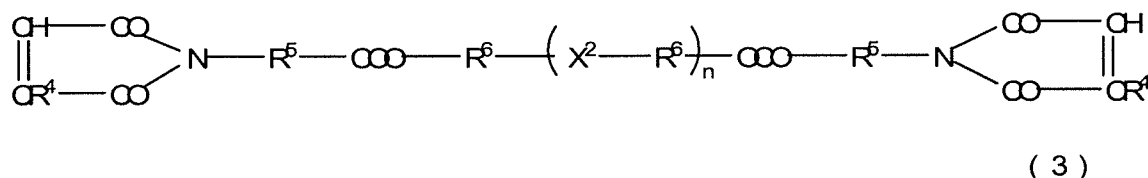
9. (Withdrawn) A resin composition according to Claim 8, wherein X^2 of the bis-maleimide compound (B') represented by the formula (3) is $-O-$.

10. (Withdrawn) A resin composition according to Claim 8, wherein R⁵ of the bis-maleimide compound (B') represented by the formula (3) is a hydrocarbon group not containing an aromatic group.
11. (Withdrawn) A resin composition according to Claim 8, wherein R⁵ of the bis-maleimide compound (B') represented by the formula (3) has 1 to 5 carbons.
12. (Withdrawn) A resin composition according to Claim 8, wherein R⁵ of the bis-maleimide compound (B') represented by the formula (3) is -CH₂- or -C₅H₁₀-.
13. (Withdrawn) A resin composition according to Claim 8, wherein R⁶ of the bis-maleimide compound (B') represented by the formula (3) is at least one selected from the group consisting of -C₃H₆- and -C₄H₈-.
14. (Currently amended) A resin composition used as an adhesive for bonding a semiconductor chip or a heat dissipating member, comprising at least a silver powder (A) having an average particle diameter of 1 to 30 μm, the following compound (B), a thermal radical initiator (C) and the following compound (D), and substantially not containing a photo polymerization initiator:

Compound (B):

a bis-maleimide compound (B') represented by the following formula (3):

Formula (3)

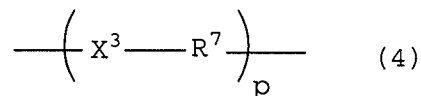


wherein X² is -O-; each R⁴ is a hydrogen atom or a methyl group; each R⁵ is a hydrocarbon group having 1 to 11 carbons and containing no aromatic group; each R⁶ is a hydrocarbon group having 3 to 6 carbons and containing no aromatic group; "n" is an integer from 1 to 50; and if the formula contains two or more parts which are denoted by the same symbol, each of them may be the same or different from each other;

Compound (D):

a compound containing a structure represented by the formula (4) in a main chain and having at least one functional group having a polymerizable C-C unsaturated bond:

Formula (4):

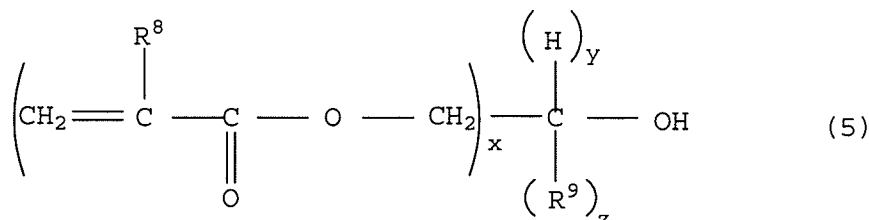


wherein X³ is ~~—O—~~, ~~—COO—~~ or ~~—OCOO—~~; R⁷ is a hydrocarbon group having 3 to 6 carbons; "p" is an integer from 1 to 50; and if the formula contains two or more parts which are denoted by the same symbol, each of them may be the same or different from each other.

15. (Withdrawn) A resin composition according to Claim 1, further containing the following acrylic ester compound (E):

Acrylic ester compound (E):

Formula (5):



wherein R⁸ is hydrogen atom or a methyl group; R⁹ is a hydrocarbon group having 1 to 3 carbons; "x", "y" and "z" are in the relationship expressed by (x+y+z)=3, 1≤x≤3, 0≤y≤2 and 0≤z≤2; and if the formula contains two or more parts which are denoted by the same symbol, each of them may be the same or different from each other.

16. (Withdrawn) A resin composition according to Claim 1, wherein R⁸ of the acrylic ester compound (E) represented by the formula (5) is a methyl group.

17. (Withdrawn) A resin composition according to Claim 1, wherein R⁹ of the acrylic ester compound (E) represented by the formula (5) is a methyl group.

18. (Withdrawn) A resin composition according to Claim 1, wherein R⁸ is a methyl group, R⁹ is a methyl group, and x=1, y=1, and z=1 in the acrylic ester compound (E) represented by the formula (5).

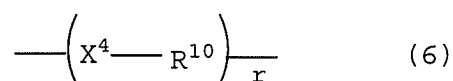
19. (Withdrawn) A resin composition according to Claim 1, wherein R^8 is a methyl group, $x=2$, $y=1$ and $z=0$ in the acrylic ester compound (E) represented by the formula (5).

20. (Withdrawn) A resin composition according to ~~any of~~ Claim 1, further comprising the following acrylamide compound (F):

Acrylamide compound (F):

a compound containing a structure represented by the following formula (6) in a main chain and having at least one functional group represented by the following formula (7):

Formula (6):



Formula (7):



wherein X^4 is $-\text{O}-$, $-\text{COO}-$ or $-\text{OCOO}-$; R^{10} is a hydrocarbon group having 3 to 6 carbons; R^{11} is hydrogen atom or a methyl group; "r" is an integer from 1 to 50; and if the formula contains two or more parts which are denoted by the same symbol, each of them may be the same or different from each other.

21. (Withdrawn) A resin composition according to Claim 20, wherein R^{10} of the structure represented by the formula (5) of the acrylamide compound (E) is at least one selected from the group consisting of $-\text{C}_3\text{H}_6-$ and $-\text{C}_4\text{H}_8-$.

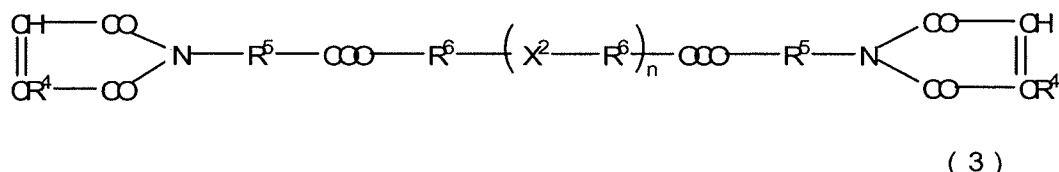
22. (Withdrawn) A resin composition according to Claim 20, wherein X^4 of the structure represented by the formula (5) of the acrylamide compound (E) is $-\text{O}-$.

23. (Currently amended) A resin composition used as an adhesive for bonding a semiconductor chip or a heat dissipating member, comprising at least a silver powder (A) having an average particle diameter of 1 to 30 μm , the following compound (B), a thermal radical initiator (C) and the following allyl ester compound (G), and substantially not containing a photo polymerization initiator:

Compound (B):

a bis-maleimide compound (B') represented by the following formula (3):

Formula (3)



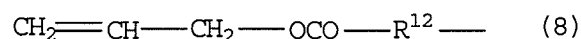
wherein X^2 is -O-; each R^4 is a hydrogen atom or a methyl group; each R^5 is a hydrocarbon group having 1 to 11 carbons and containing no aromatic group; each R^6 is a hydrocarbon group having 3 to 6 carbons and containing no aromatic group; "n" is an integer from 1 to 50; and if the formula contains two or more parts which are denoted by the same symbol, each of them may be the same or different from each other;

Allyl ester compound (G):

a compound having at least one functional group represented by the following formula

(8):

Formula (8):

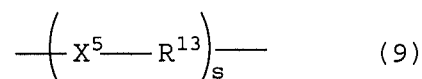


wherein R^{12} is a hydrocarbon group having 2 to 8 carbons.

24. (Original) A resin composition according to Claim 23, wherein R^{12} of the structure represented by the formula (8) of the allyl ester compound (G) does not contain an aromatic group.

25. (Previously presented) A resin composition according to Claim 23, wherein the allyl ester compound (G) contains a structure represented by the following formula (9):

Formula (9):



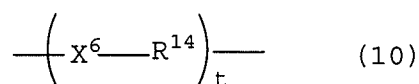
wherein X^5 is -O-, -COO- or -OCOO-; R^{13} is a hydrocarbon group having 3 to 6 carbons; "s" is an integer from 1 to 50; and if the formula contains two or more parts which are denoted by the same symbol, each of them may be the same or different from each other.

26. (Withdrawn) A resin composition according to Claim 1, further containing the following compound (H):

Compound (H):

a compound derived from a hydrocarbon having at least one C-C unsaturated bond in one molecule, which has a number average molecular weight of 500 to 5,000, contains a structure represented by the following formula (10) at its modified position, and has at least one functional group having a polymerizable C-C unsaturated bond:

Formula (10):



wherein X^6 is ---O--- , ---COO--- or ---OCOO--- ; R^{14} is a hydrocarbon group having 3 to 6 carbons; "t" is an integer from 1 to 50; and if the formula contains two or more parts which are denoted by the same symbol, each of them may be the same or different from each other.

27. (Withdrawn) A resin composition according to Claim 26, wherein X^6 is ---O--- and R^{14} is C_4H_8 in the structure represented by the formula (10) of the compound (H).

28. (Withdrawn) A resin composition according to Claim 26, wherein a hydrocarbon led to the compound (H) and having at least one C-C unsaturated bond in one molecule is a butadiene polymer.

29. (Withdrawn) A resin composition according to Claim 26, wherein a hydrocarbon led to the compound (H) and having at least one C-C unsaturated bond in one molecule is an isoprene polymer.

30. (Withdrawn) A resin composition according to Claim 26, wherein the polymerizable C-C unsaturated bond of the compound (H) is a (meth)acryloyl group.

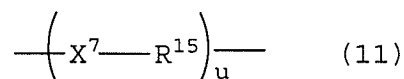
31. (Withdrawn) A resin composition according to Claim 1, further containing a reactive diluent (I).

32. (Withdrawn) A resin composition according to Claim 31, wherein the reactive diluent (I) is a vinyl compound which is in liquid form at room temperature other than the compounds (D) to (H).
33. (Withdrawn) A resin composition according to Claim 32, wherein the vinyl compound is a compound containing at least one (meth)acryloyl group.
34. (Withdrawn) A resin composition according to Claim 1, further containing a silane-based coupling agent (J).
35. (Withdrawn) A resin composition according to Claim 34, wherein the coupling agent (J) is a silane coupling agent having an S-S bond.
36. (Withdrawn) A resin composition according to Claim 34, wherein the coupling agent (J) further contains a silane coupling agent having a glycidyl group.
37. (Withdrawn) A resin composition according to Claim 1, containing a compound (K) having a glycidyl group other than the silane coupling agent having a glycidyl group.
38. (Withdrawn) A resin composition according to Claim 1, further containing the following compound (L) and the following compound (M):

Compound (L):

a compound containing the following structure represented by the formula (11) in a main chain and having at least one glycidyl group:

Formula (11):



wherein X^7 is $-O-$, $-COO-$ or $-OCOO-$; R^{15} is a hydrocarbon group having 3 to 6 carbons; "u" is an integer from 2 to 50; and if the formula contains two or more parts which are denoted by the same symbol, each of them may be the same or different from each other;

Compound (M):

a compound having a functional group which can react with the glycidyl group of the compound (L).

39. (Withdrawn) A compound according to Claim 38, wherein the repeating unit (X^7-R^{15}) of the compound (L) is the same as the repeating unit (X^1-R^1) of the compound (M).

40. (Withdrawn) A semiconductor device containing the resin composition according to Claim 1 as a die attach material.

41. (Withdrawn) A semiconductor device containing the resin composition according to Claim 1 as a material for bonding a heat dissipating member.